CLAIMS:

1. A dielectric porcelain composition comprising $MgTiO_3$ and $Mg_2SiO_4$, charaterised in that the composition satisfies $a + b = 1$ and $0 < b < 1$, wherein $a$ denotes a molar ratio of $MgTiO_3$ and $b$ denotes a molar ratio of $Mg_2SiO_4$.

2. The composition according to claim 1, characterised in that the molar ration $b$ is defined as $0.5 \leq b < 1$

3. The composition according to claim 1, characterised in that the composition is a dielectric porcelain composition calcined at a temperature of not less than 1300°C.

4. A dielectric porcelain composition comprising $MgTiO_3$ and $CaTiO_3$, characterised in that the composition satisfies $a + c = 1$ and $0 < c \leq 0.15$, wherein $a$ denotes a molar ratio of $MgTiO_3$ and $c$ denotes a molar ratio of $CaTiO_3$.

5. The composition according to claim 4, characterised in that the molar ratio $c$ is defined as $0.03 \leq c \leq 0.08$.

6. The composition according to claim 4, characterised in that the composition is a dielectric porcelain composition calcined at a temperature of not less than 1250°C.

7. A dielectric porcelain composition comprising $MgTiO_3$, $Mg_2SiO_4$ and $CaTiO_3$, characterised in that the composition satisfies $a + b + c = 1$, $0 < b < 1$ and $0 < c \leq 0.15$, wherein $a$ denotes a molar ratio of $MgTiO_3$, $b$ denotes a molar ratio of $Mg_2SiO_4$ and $c$ denotes a molar ratio of $CaTiO_3$.

8. The composition according to claim 7, characterised in that the molar ratio $b$ is defined as $0.5 \leq b < 1$ and the molar ratio $c$ is defined as $0.05 \leq c \leq 0.09$.

9. The composition according to claim 7, characterised in that the composition is a dielectric porcelain composition calcined at a temperature of not less than 1300°C.

10. A dielectric resonator using as a dielectric material a dielectric porcelain composition comprising $MgTiO_3$ and $Mg_2SiO_4$ and satisfying $a + b = 1$ and $0 < b < 1$, wherein $a$ denotes a molar ratio of $MgTiO_3$ and $b$ denotes a molar ratio of $Mg_2SiO_4$.

11. A dielectric resonator, characterised in that it uses as a dielectric material a dielectric porcelain composition that comprises $MgTiO_3$ and $CaTiO_3$ and satisfies $a + c = 1$ and $0 < c \leq 0.15$, wherein $a$ denotes a molar ratio of $MgTiO_3$ and $c$ denotes a molar ratio of $CaTiO_3$.

12. A dielectric resonator characterised in that it uses as a dielectric material a dielectric porcelain composition that comprises $MgTiO_3$, $Mg_2SiO_4$ and $CaTiO_3$ and satisfies $a + b + c = 1$, $0 < b < 1$ and $0 < c \leq 0.15$, wherein $a$ denotes a molar ratio of $MgTiO_3$, $b$ denotes a molar ratio of $Mg_2SiO_4$ and $c$ denotes a molar ratio of $CaTiO_3$.

13. A manufacturing process for a dielectric porcelain composition that comprises $MgTiO_3$ and $Mg_2SiO_4$, characterised in that it comprises a step of adjusting a content of $Mg_2SiO_4$ to satisfy $a + b = 1$ and $0 < b < 1$, wherein $a$ denotes a molar ratio of $MgTiO_3$ and $b$ denotes a molar ratio of $Mg_2SiO_4$, thereby adjusting relative permittivity $\varepsilon r$.

14. A manufacturing process for a dielectric porcelain composition that comprises $MgTiO_3$ and $CaTiO_3$, characterised in that it comprises a step of adjusting a content of $CaTiO_3$ to satisfy $a + c = 1$ and $0 < c \leq 0.15$, wherein $a$ denotes a molar ratio of $MgTiO_3$ and $c$ denotes a molar ratio of $CaTiO_3$, thereby adjusting temperature coefficient $\tau f$.

15. A manufacturing process for a dielectric porcelain composition that comprises $MgTiO_3$, $Mg_2SiO_4$ and $CaTiO_3$, characterised in that it comprises a step of adjusting respective contents of $Mg_2SiO_4$ and $CaTiO_3$ to satisfy $a + b + c = 1$, $0 < b < 1$ and $0 < c \leq 0.15$, wherein $a$ denotes a molar ratio of $MgTiO_3$, $b$ denotes a molar ratio of $Mg_2SiO_4$ and $c$ denotes a molar ratio of $CaTiO_3$, thereby adjusting relative permittivity $\varepsilon r$ and temperature coefficient $\tau f$.